THE ASTROPHYSICAL JOURNAL CONTENTS OF VOLUME 307, PART 1

1986 SEPTEMBER 1, Number 1

THE DISTANCE MODULUS OF THE LARGE MAGELLANIC CLOUD	Page 1	Fiche 108-A9
DYNAMICS OF THE POOR CLUSTERS MKW 4 AND AWM 4Eliot M. Malumuth and Gerard A. Kriss	10	108-B1
RECURRENT OUTBURSTS IN THE BROAD-LINE REGION OF NGC 1566 Danielle Alloin, Didier Pelat, M. M. Phillips, R. A. E. Fosbury, and K. Freeman	23	108-C2
A RADIO AND OPTICAL STUDY OF THE INTERACTING SYSTEM NGC 5090-5091R. M. Smith and G. V. Bicknell	36	108-D3
RADIO SOURCE COUNTS AT 6 CENTIMETERS TO 0.1 MILLIJANSKYSR. B. Partridge, K. C. Hilldrup, and M. I. Ratner	46	108-E4
THE X-RAY BACKGROUND AND THE EVOLUTION OF QUASARS	53	108-E11
SPECTRAL ENERGY DISTRIBUTIONS OF ACTIVE GALACTIC NUCLEI BETWEEN 0.1 AND 100 MICRONS R. A. Edelson and M. A. Malkan	59	108-F4
ACTIVE EXTRAGALACTIC SOURCES: NEARLY SIMULTANEOUS OBSERVATIONS FROM 20 CENTIMETERS TO		
1400 Å Robert Landau, Bill Golisch, Terry J. Jones, T. W. Jones, Jeffrey Pedelty, Lawrence Rudnick, Michael L. Sitko, Jeff Kenney, Tom Roellig, Erkki Salonen, Seppo Urpo, Gary Schmidt, Gerry Neugebauer, Keith Matthews, J. H. Elias, C. Impey, P. Clegg, and S. Harris	78	108-G1
THE EVOLUTION OF THE COMPACT RADIO SOURCE IN 3C 345. I. VLBI OBSERVATIONS J. A. Biretta, R. L. Moore, and M. H. Cohen	93	109-B2
THE BLACK HOLE BINARY A0620-00	110	109-C5
REDISTRIBUTION OF ANGULAR MOMENTUM BY NONAXISYMMETRIC INSTABILITIES IN A THICK ACCRETION DISK	123	109-D5
A STUDY OF THE MORPHOLOGY AND KINEMATICS OF THE DENSE GAS ASSOCIATED WITH STAR-FORMING REGIONS	134	109-E5
A DYNAMICAL MODEL FOR SS 433	144	109-F1
THE BINARY SYSTEM OF SS 433. I. FURTHER CONSTRAINTS IMPOSED BY OBSERVATIONS OF THE OPTICAL CONTINUUM SPECTRUM	152	109-F6
FATE OF MERGING DOUBLE WHITE DWARFS	161	109-G5
THE LUMINOSITY FUNCTION OF DA WHITE DWARFSThomas A. Fleming, James Liebert, and Richard F. Green	176	110-A7
THE HIGH-RESOLUTION SOFT X-RAY SPECTRUM OF HZ 43 F. B. S. Paerels, J. A. M. Bleeker, A. C. Brinkman, E. H. B. M. Gronenschild, and J. Heise	190	110-B6
THE DISCOVERY OF 3.8 HOUR PERIODIC INTENSITY DIPS AND ECLIPSES FROM THE TRANSIENT LOW-MASS X-RAY BINARY EXO 0748-676	199	110-C4
THE BURSTING BEHAVIOR OF THE TRANSIENT X-RAY BURST SOURCE EXO 0748—676: A DEPENDENCE BETWEEN THE X-RAY BURST PROPERTIES AND THE STRENGTH OF THE PERSISTENT EMISSION M. Gottwald, F. Haberl, A. N. Parmar, and N. E. White	213	110-D4
THE SCATTERED LIGHT ECHO OF A SUPERNOVA	225	110-E4
THE LOCAL INTERSTELLAR MEDIUM. IV. THE LINE OF SIGHT TO v SCORPIIDavid C. Eder and Donald G. York	232	110-E1
A SURVEY OF INTERSTELLAR SULFUR ABUNDANCE AND IMPLICATIONS FOR P II OSCILLATOR STRENGTHS	240	110-F5

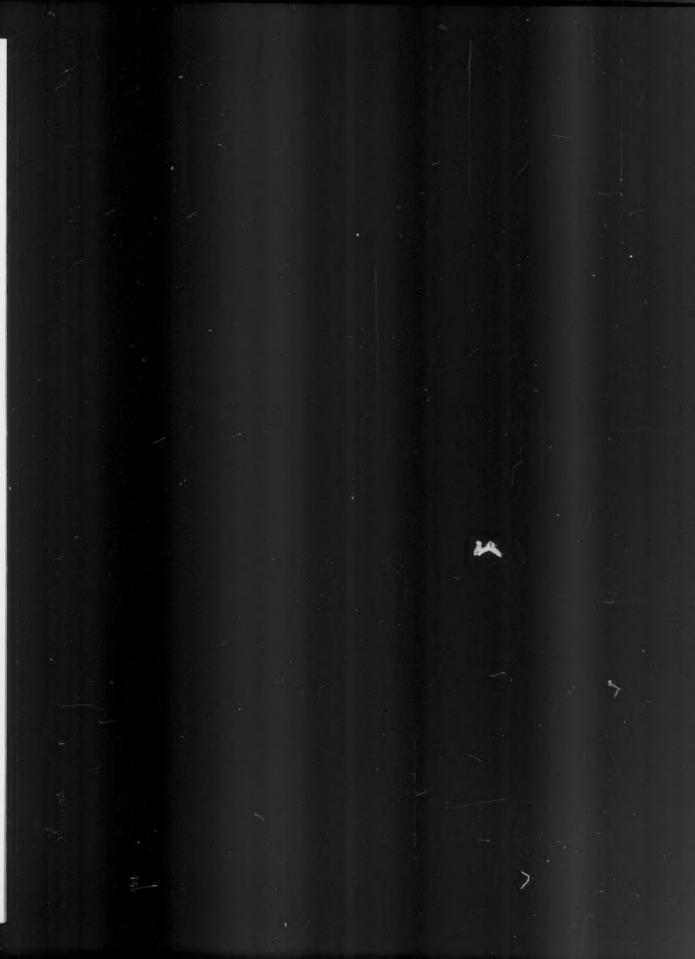
	Dage	Fiche
FAR-ULTRAVIOLET FLUORESCENCE OF CARBON MONOXIDE IN THE RED GIANT ARCTURUS. II. ANALYSIS OF HIGH-DISPERSION IUE SPECTRA	Page 246	110-F12
LANTHANIDE ABUNDANCES IN THREE COOL CP STARS	254	110-G5
ON THE ALPHA ORIONIS TRIPLE SYSTEM	260	110-G11
SUBMILLIMETER POLARIZATION IN THE ORION NEBULA	270	111-A8
THE ALIGNMENT OF INTERSTELLAR GRAINS	281	111-B5
FILLED-APERTURE MAPS OF SELECTED H 11 REGIONS AT 3.5 MILLIMETERS M. A. Gordon, P. R. Jewell, M. A. Kaftan-Kassim, and C. J. Salter	288	111- B 12
APERTURE-SYNTHESIS OBSERVATIONS OF CARBON MONOXIDE IN THE EGG NEBULA G. M. Heiligman, G. L. Berge, M. J. Claussen, R. B. Leighton, K. Y. Lo, C. R. Masson, A. T. Moffet, T. G. Phillips, A. I. Sargent, S. L. Scott, N. Z. Scoville, P. G. Wannier, and D. P. Woody	306	111-D3
THE IONIZATION STRUCTURE OF PLANETARY NEBULAE. VI. NGC 7662	314	111-D11
ELECTRON TEMPERATURES IN PLANETARY NEBULAE	322	111-E5
C ⁺² ELECTRON TEMPERATURES IN PLANETARY NEBULAE	337	111-F7
KINEMATICS AND DENSITY OF THE GALACTIC SPHEROID	347	111-G5
THE SIZE SPECTRUM OF MOLECULAR CLOUDS IN THE OUTER GALAXY Susan Terebey, Michel Fich, Leo Blitz, and Christian Henkel	357	112-A1
A STUDY OF $E>4$ MeV GAMMA RADIATION FROM THE GALACTIC DISK IN THE REGION $-20^{\circ} < l < 20^{\circ}$	370	112-A14
ON THE PROPAGATION OF SMALL DISTURBANCES IN A REACTING-RADIATING FLUID $Miguel\ H.\ Ib\'a\~nez\ S.$	382	112-B14
THE SOFT X-RAY BACKGROUND AS A SUPERNOVA BLAST WAVE VIEWED FROM INSIDE: SOLAR ABUNDANCE MODELS	389	112-C7
EFFECTS OF FIBRIL MAGNETIC FIELDS ON SOLAR p-MODES. II. CALCULATION OF MODE FREQUENCY SHIFTS	401	112-D5
PROPERTIES OF INTERMEDIATE-DEGREE SOLAR OSCILLATION MODES Ken G. Libbrecht and H. Zirin	413	112-E3
PARTICLE PROPAGATION EFFECTS ON WAVE GROWTH IN A SOLAR FLUX TUBE S. M. White, D. B. Melrose, and G. A. Dulk	424	112-F1
SOLAR MICROBURSTS AT METER-DEKAMETER WAVELENGTHS M. R. Kundu, T. E. Gergely, A. Szabo, R. Loiacono, and S. M. White	436	112-F13
VLA OBSERVATIONS OF COMPACT, VARIABLE SOURCES ON THE SUN Robert F. Willson and Kenneth R. Lang	443	112-G7
EXTREME LIMB PROFILES OF THE SUN AT FAR-INFRARED AND SUBMILLIMETER WAVELENGTHS C. Lindsey, E. E. Becklin, F. Q. Orrall, M. W. Werner, J. T. Jefferies, and I. Gatley	448	112-G1
JUPITER'S ZONE-BELT STRUCTURE AT RADIO WAVELENGTHS. I. OBSERVATIONS Inke de Pater and John R. Dickel	459	113-A11
NEUTRAL COMETARY ATMOSPHERES. V. C2 AND CN IN COMETS	472	113-C3
ERRATUM ²⁶ Mg(p, n) ²⁶ Al Cross Section Measurements	485	113-D2
INSTRUCTIONS TO AUTHORS	i	113-D3
1986 SEPTEMBER 15, Number 2		
THE HUBBLE RATIO FROM SOSIES OF M31 IN THE VIRGO S CLOUD AND IN THE HERCULES SUPERCLUSTER $G.\ de\ Vaucouleurs\ and\ H.\ G.\ Corwin,\ Jr.$	487	114-C1
THE DYNAMICS OF SUPERCLUSTERS: THE EFFECT OF SHEAR	493	114-C7
VELOCITY FIELDS AROUND RICH CLUSTERS OF GALAXIES	499	114-D1

CONTENTS

	Dana	Pisks.
A REDSHIFT SURVEY OF LOW SURFACE BRIGHTNESS GALAXIES. II. DO THEY FIL! THE VOIDS? Gregory D. Bothun, Timothy C. Beers, Jeremy R. Mould, and John P. Huchra	Page 510	Fiche
AN X-RAY AND OPTICAL STUDY OF THE CLUSTER OF GALAXIES ABELL 754 D. Fabricant, T. C. Beers, M. J. Geller, P. Gorenstein, J. P. Huchra, and M. J. Kurtz	530	114-F4
DETECTION OF A "ROTATING" GAS CLOUD 100 KILOPARSECS IN DIAMETER SURROUNDING 3C 275.1, A QUASAR AT THE CENTER OF A RICH CLUSTER OF GALAXIES	540	114-G1
A GENERAL, GAUGE-INVARIANT ANALYSIS OF THE COSMIC MICROWAVE ANISOTROPY L. F. Abbott and R. K. Schaefer	546	114-G8
ON THE SHORT TIME SCALE VARIABILITY OF THE SEYFERT GALAXY NGC 6814 J. H. Beall, K. S. Wood, and D. J. Yentis	563	115-B1
AN UNUSUAL JETLIKE FEATURE ASSOCIATED WITH THE SEYFERT GALAXY MARKARIAN 315 John W. MacKenty	571	115-B11
THE SYNCHROTRON-SELF-COMPTON PROCESS IN SPHERICAL GEOMETRIES. II. APPLICATION TO ACTIVE GALACTIC NUCLEI	576	115-C6
CIRCUMNUCLEAR WATER VAPOR MASERS IN ACTIVE GALAXIES	592	115-D8
THE DISTRIBUTION OF INTERSTELLAR MATTER IN THE Scd GALAXY NGC 6946. I. THE NEUTRAL HYDROGEN DISK	600	115-E2
DECONVOLUTION OF ELLIPTICAL NUCLEI OF GALAXIES: APPLICATION TO M81 O. Bendinelli, G. Parmeggiani, and F. Zavatti	611	115-E14
INFRARED AND RADIO EMISSION FROM II Zw 40 AND OTHER BLUE DWARF GALAXIES C. G. Wynn-Williams and E. E. Becklin	620	115-F10
DYNAMICAL MODELS OF A SAMPLE OF POPULATION II STARS	627	115-G3
SIMULTANEOUS X-RAY AND OPTICAL OBSERVATIONS OF GX 339-4 IN AN X-RAY HIGH STATE K. Makishima, Y. Maejima, K. Mitsuda, H. V. Bradt, R. A. Remillard, I. R. Tuohy, R. Hoshi, and M. Nakagawa	635	116-A1
X-RAY EMISSION LINES FROM THREE GALACTIC BULGE SOURCES S. D. Vrtilek, D. J. Helfand, J. P. Halpern, S. M. Kahn, and F. D. Seward	644	116-A1
OBSERVATIONS OF QUASI-PERIODIC OSCILLATIONS FROM GX 5-1 AND CYGNUS X-2 WITH THE EINSTEIN		
(HEAO 2) OBSERVATORY R. F. Elsner, M. C. Weisskopf, W. Darbro, B. D. Ramsey, A. C. Williams, P. G. Sutherland, and J. E. Grindlay	655	116-B7
ON THE MODAL SELECTION OF RADIAL STELLAR PULSATORS	661	116-C1
INTERMITTENT STELLAR WIND ACCRETION AND THE LONG-TERM ACTIVITY OF POPULATION I BINARY SYSTEMS CONTAINING AN X-RAY PULSAR	669	116-C9
NEW CONSTRAINTS ON THE PROGENITOR OF THE BINARY PULSAR: PSR 1913+16 Adam Burrows and S. E. Woosley	680	116-D6
THE LATE-TIME SPECTRUM OF THE TYPE II SUPERNOVA 1980k	685	116-D1
ON THE FREQUENCY INDEPENDENCE OF PULSAR MICROSTRUCTURE PHASE	691	116-E3
PRIMORDIAL STELLAR EVOLUTION: THE PRE-MAIN-SEQUENCE PHASE Steven W. Stahler, Francesco Palla, and E. E. Salpeter	697	116-E9
EVOLUTION FROM THE MAIN SEQUENCE TO THE WHITE DWARF STAGE FOR A 3 M_{\odot} STAR I. Mazzitelli and F. D'Antona	706	116-F4
ON THE FREQUENCY OF OCCURRENCE OF OXYGEN-NEON-MAGNESIUM WHITE DWARFS IN CLASSICAL NOVA SYSTEMS	721	116-G5
PHOTOSPHERES OF HOT STARS. II. AN ANALYSIS OF ZETA PUPPIS Bruce Bohannan, David C. Abbott, Stephen A. Voels, and D. G. Hummer	728	117-A1
A MODEL FOR THE OUTBURSTS OF THE RECURRENT NOVA RS OPHIUCHI Mario Livio, James W. Truran, and Ronald F. Webbink	736	117-A9
THE BLUE STRAGGLERS OF OMEGA CENTAURI	743	117-B2

CONTENTS

	Page	Fiche
HYPERCRITICAL SPHERICAL ACCRETION ONTO COMPACT OBJECTS	755	117-C1
X-RAY AND OPTICAL OBSERVATIONS OF THE ULTRASHORT PERIOD DWARF NOVA SW URSAE MAJORIS: A LIKELY NEW DQ HERCULIS STAR	765	117-C11
THE EFFECT OF AMBIPOLAR DIFFUSION ON MAGNETIC BRAKING OF MOLECULAR CLOUD CORES: AN EXACT, TIME-DEPENDENT SOLUTION	781	117-D13
SHORT-TERM SPECTRAL VARIABILITY IN AB AURIGAE: CLUES FOR ACTIVITY IN HERBIG AC STARS. II. THE Ca II K LINE	791	117-E9
THE EFFECTS OF ELECTRON SCATTERING OPACITY IN THE BROAD EMISSION-LINE REGIONS OF QUASARS $T.\ R.\ Kallman\ and\ J.\ H.\ Krolik$	805	117-F9
QUASARS MEASURED BY THE INFRARED ASTRONOMICAL SATELLITE G. Neugebauer, G. K. Miley, B. T. Soifer, and P. E. Clegg	815	117-G7
PREDICTED LONG-SLIT, HIGH-RESOLUTION EMISSION-LINE PROFILES FROM INTERSTELLAR BOW SHOCKS. II. ARBITRARY BOW SHOCK ORIENTATION	829	118-A7
INFRARED SPECTRA OF ROTATING PROTOSTARS	836	118-B1
OBSERVATIONS OF GASEOUS CIRCUMSTELLAR DISKS. III	854	118-C5
ULTRAVIOLET AND INFRARED OBSERVATIONS OF STARS WITH "QUENCHED" CHROMOSPHERES AND THE NATURE OF MASS LOSS	859	118-C10
A LATITUDE SURVEY OF CARBON MONOXIDE EMISSION NEAR THE GALACTIC CENTERT. M. Bania	868	118-D6
THE GLOBAL EVOLUTION OF THE PRIMORDIAL SOLAR NEBULASteven P. Ruden and D. N. C. Lin	883	118-E12
THE IDENTIFICATION OF SOLAR ³ He-RICH EVENTS AND THE STUDY OF PARTICLE ACCELERATION AT THE SUN	902	118-G3
TWO CLASSES OF GAMMA-RAY/PROTON FLARES: IMPULSIVE AND GRADUAL	912	119-A3
A STUDY OF THE STOCHASTIC ENERGIZATION OF CHARGED PARTICLES WITH AND WITHOUT SYNCHROTRON ENERGY LOSS	929	119-B8
EVIDENCE FOR NONLINEAR WAVE-WAVE INTERACTIONS IN SOLAR TYPE III RADIO BURSTS R. P. Lin, W. K. Levedahl, W. Lotko, D. A. Gurnett, and F. L. Scarf	954	119-D7
THERMAL EFFECTS OF SUBMERGED HORIZONTAL FLUX TUBES	966	119-E5
RADIATION LOSS RATES IN LYMAN-ALPHA FOR SOLAR CONDITIONS	975	119-F1
THE EXTREME-ULTRAVIOLET SPECTRUM (300–630 Å) OF AN ERUPTING PROMINENCE OBSERVED FROM SKYLAB	982	119-F9
TEMPORAL VARIABILITY OF COMET IRAS-ARAKI-ALCOCK 1983d: THE MAY 10 EVENT Barry L. Lutz and R. Mark Wagner	993	120-A1
THE ULTRAVIOLET CALIBRATION OF THE HUBBLE SPACE TELESCOPE. I. SECONDARY STANDARDS OF ABSOLUTE ULTRAVIOLET FLUX AND THE RECALIBRATION OF IUE	1001	120-A9
TRANSITION PROBABILITY OF THE AI II \(\lambda\)2669 INTERSYSTEM LINE B. Carol Johnson, Peter L. Smith, and W. H. Parkinson	1013	120-B7
ERRATUM A CRITICAL EXAMINATION OF THICK DISKS WITH EQUATORIAL ACCRETION	1018	120-B1
ABSTRACTS OF ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES, 1986 OCTOBER ISSUE		
THE DISTANCE TO THE HERCULES SUPERCLUSTER. I. BASIC DATA FOR 220 GALAXIES IN CGCG FIELD 108 Ronald J. Buta and Harold G. Corwin, Jr.	1019	120-C1
THE DISTANCE TO THE HERCULES SUPERCLUSTER. II. APPLICATION OF TERTIARY INDICATORS AND AN ESTIMATE OF THE HUBBLE CONSTANT	1019	120-C1
THE ANGULAR CORRELATION FUNCTION OF GALAXIES AS A FUNCTION OF MAGNITUDE	1019	120-C1
THIRD-ORDER PERTURBATION THEORY: STRUCTURE PARAMETERS OF UNIFORMLY ROTATING POLYTROPIC STARS AND IMPROVEMENT AND ACCURACY OF THE RESULTS	1020	120-C2
THE CHEMICAL COMPOSITION OF CARBON STARS. I. CARBON, NITROGEN, AND OXYGEN IN 30 COOL CARBON STARS IN THE GALACTIC DISK	1020	120-C2
INDEX TO VOLUME 308, PARTS 1 AND 2	i	114-B1





THE ASTROPHYSICAL JOURNAL LETTERS TO THE EDITOR

CONTENTS OF VOLUME 308, PART 2

1986 September 1, Number 1

	Page	Fiche
DISCOVERY OF AN INFRARED-LOUD QUASAR C. A. Beichman, B. T. Soifer, G. Helou, T. J. Chester, G. Neugebauer, F. C. Gillett, and F. J. Low	L1	113-E11
HOT GAS IN THE NUCLEUS OF IC 342	L7	113-F2
PULSED TeV GAMMA RAYS DETECTED FROM HERCULES X-1 DURING X-RAY SOURCE ECLIPSE P. W. Gorham, M. F. Cawley, D. J. Fegan, K. G. Gibbs, R. C. Lamb, D. F. Liebing, N. A. Porter, V. J. Stenger, and T. C. Weekes	L11	113-F6
NEW SYNCHROTRON LUMINOSITY DISTANCE LIMIT FOR THE 1979 MARCH 5 GAMMA-RAY EVENT $E.\ P.\ Liang$	L17	113-F11
IONIC CHARGE STATES OF SOLAR ENERGETIC PARTICLES: EFFECTS OF FLARE X-RAYS D. J. Mullan and W. L. Waldron	L21	113-G1
CHROMIUM ISOTOPIC ANOMALIES IN THE ALLENDE METEORITE	L27	113-G6
AB INITIO MOLECULAR ORBITAL STUDIES OF LOW-ENERGY, METASTABLE ISOMERS OF THE UBIQUITOUS CYCLOPROPENYLIDENE	L31	113-G10

1986 September 15, Number 2

	Page	Fiche
AN UPPER LIMIT ON THE MICROWAVE BACKGROUND TEMPERATURE AT z = 1.776 David M. Meyer, John H. Black, Frederic H. Chaffee, Jr., Craig B. Foltz, and Donald G. York	L37	120-E1
GAMMA-RAY BURSTERS AT COSMOLOGICAL DISTANCES	L43	120-E6
ARE GAMMA-RAY BURSTS OPTICALLY THICK?	L47	120-E10
X-RAY SPECTRUM OF THE 2A 0335+096 CLUSTER OF GALAXIES K. P. Singh, N. J. Westergaard, and H. W. Schnopper	L51	120-E14
AN X-RAY HEATED WIND IN NGC 1068	L55	120-F4
OBSERVATIONS OF THE SOFT X-RAY DIFFUSE BACKGROUND AT 0.1 keV J. J. Bloch, K. Jahoda, M. Juda, D. McCammon, W. T. Sanders, and S. L. Snowden	L59	120-F8
THE NEON NOVA. II. CONDENSATION OF SILICATE GRAINS IN THE EJECTA OF NOVA VULPECULAE 1984 NUMBER 2	L63	120-F12
CBS 78: A SECOND EXTREMELY RARE DBZ DEGENERATE STAR WITH ACCRETED CALCIUM Edward M. Sion, Harry L. Shipman, R. Mark Wagner, James Liebert, and Sumner G. Starrfield	L67	120-G2
NONLINEAR STATISTICS AND BIASING	L71	120-G5